

RCRA RECORDS CENTER
 FACILITY *US Army Corp of Engineers*
 ID. NO. *MAR00006767*
 FILE # *C.R. 12*
 OTHER _____

Contract: **DACA33-94-C-0048**
 Charlestown Navy Yard



*(Data compiled from Records held at North Central Resident Office,
 Corps of Engineers, Devens, Mass. On Feb 9, 2001)*

Summary of Work:

Removal and disposal of three light towers; demolition, removal, and disposal of pier 9, pier 10, and buildings 108, 203, and 277; selective demolition, removal, and disposal of the marine railway. Work also includes diving services, asbestos abatement, and abatement of bird guano.

Large Quantity Generator

Mass. DEP

Receipt: \$1800.00

ID: EPA MAR00006767

Manifests: (Peeling paint chips that fell to floor / put into drums from building 108)

| | | |
|--|-----------------|--------------------|
| DEP Ma. H454613 (lead, 9,NA3077) | 3 drums | 1,600 Lbs. |
| Haz. Waste Man. NY B 798151-5 (Haz. Waste Solid) | 70 drums | 10,000 Lbs. |
| " " " NY B 798154-2 (" " ") | 60 drums | 30,000 Lbs. |
| " " " NY B 798155-1 (" " ") | <u>70 drums</u> | <u>35,000 Lbs.</u> |
| | 203 drums | |

76,000lb

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SECTION 02090

LEAD-BASED PAINT (LBP) ABATEMENT AND DISPOSAL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

| | |
|------------------|--|
| CFR 29 Part 1910 | Occupational Safety and Health Standards |
| CFR 29 Part 1926 | Safety and Health Regulations for Construction |
| CFR 40 Part 148 | Hazardous Waste Injection Restrictions |
| CFR 40 Part 260 | Hazardous Waste Management System: General |
| CFR 40 Part 261 | Identification and Listing of Hazardous Waste |
| CFR 40 Part 262 | Standards Applicable to Generators of Hazardous Waste |
| CFR 40 Part 263 | Standards Applicable to Transporters of Hazardous Waste |
| CFR 40 Part 264 | Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities |
| CFR 40 Part 265 | Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities |
| CFR 40 Part 268 | Land Disposal Restrictions |
| CFR 49 Part 172 | Hazardous Material Table, Special Provisions, Hazardous Material Communications, Emergency Response Information, and Training Requirements |
| CFR 49 Part 178 | Specifications for Packaging |

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

| | |
|---------------|--|
| HUD ACCN-5646 | (1990; Rev May 1991) Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing |
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LEAD BASED PAINT REMOVAL, CHARLESTOWN NAVY YARD

EDC

ENGINEERING MANUALS (EM)

EM 385-1-1

(1992) U.S. Army Corps of Engineers
Safety and Health Requirements Manual

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH OSHA Booklet 3142

Lead in Construction

CODE OF MASSACHUSETTS REGULATIONS
105 CMR 460.000 Lead Poisoning Prevention and Control (01/14/94)

1.2 SUBMITTALS

Note that a supplemental submittal register for this work is attached at the end of this section.

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300 SUBMITTAL DESCRIPTIONS:

SD-01 Data

Equipment List; GA.

A list of equipment items to be used in the work, including brand names, model, capacity, performance characteristics, quantities and other pertinent information.

SD-08 Statements

Lead-Based Paint (LBP) Management Plan; GA.

The Contractor shall review the specified abatement work tasks and abatement methods and shall prepare a detailed LBP Management Plan that identifies the work procedures, health, and safety measures to be used in LBP abatement. The plan shall address the various sources of lead and the methods to be undertaken to abate the lead hazards to include the following key elements:

- a. ~~Location of LBP containing components~~ keyed to project drawings.
- b. ~~Abatement methods for each~~ LBP containing component.
- c. Means for notifying of proposed work schedules.
- d. ~~Training requirements~~ as required by Federal, state, and local regulations.
- e. Unique problems associated with the LBP abatement project.
- f. Sketch of LBP control areas and decontamination areas.

- g. ~~Eating, drinking, smoking, and rest room procedures.~~
- h. Sequencing of LBP related work.
- i. ~~Personnel protective equipment; respiratory protection program and controls.~~
- j. Engineering controls, ~~containment structures~~, and safety measures.
- k. Worker exposure assessment procedures.
- l. Work Practice controls.
- m. Housekeeping.
- n. Hygiene facilities and practice.
- o. Medical surveillance, including medical removal protection.
- p. ~~Sampling, testing and analytical methods~~, to include personal air sampling requirements of CFR 29 Part 1926 Section .62 and when specified or where required, environmental air sampling, dust wipe sampling (preabatement, during abatement, post abatement), toxicity characteristic leaching procedure (TCLP) of the waste material in accordance with CFR 40 Part 261. Procedures must include frequency, locations, and sampling and analytical methods to be used.
- q. Manufacturers literature describing the ~~encapsulant material~~ proposed for the work, and evidence that the material is listed on the Register of Approved Encapsulants in compliance with 105 CMR 460.000.

Emergency Contingency Plan; GA.

An emergency contingency plan shall be prepared in accordance with CFR 40 Part 261. Procedure must address the following LBP abatement hazards as appropriate to the project:

- a. Detection of unexpected lead levels on adjacent grounds.
- b. Spilling of lead debris bags or containers.
- c. Phone numbers for project manager, local fire, police and medical personnel.

Hazardous Waste Management Plan; GA.

A Hazardous Waste Management Plan shall be prepared that complies with applicable requirements of Federal, state, and local hazardous waste regulations and addresses:

- a. Identification or documentation of potential hazardous wastes associated with the work.

- b. Estimated quantities of wastes to be generated and disposed of.
- c. Names and qualifications of each Contractor that will be transporting, storing, treating, and disposing of the wastes; the facility location, phone number, and name of a 24-hour point of contact shall be included. Two copies of EPA, state, and local hazardous waste permit applications, permits, and EPA identification numbers.
- d. Names and qualifications (experience and training) of personnel who will be working onsite with hazardous waste.
- e. List of waste handling equipment to be used in performing the work to include cleaning, volume reduction, and transport equipment.
- f. Spill prevention, containment, and clean-up contingency measures to be implemented.
- g. Work plan and schedule for waste containment, removal, and disposal. Waste shall be cleaned up and containerized daily.
- h. Cost for hazardous waste disposal according to this plan.

Waste Handling and Site Storage Plan; GA.

A Handling and Site Storage Plan shall be prepared that addresses the handling and storage of LBP debris in accordance with the requirement of CFR 40 Part 262 and CFR 40 Part 265. The Contractor shall confirm that an EPA identification number has been obtained so that proper manifesting of the waste will be addressed, and that site storage limitations, including the time of storage, container requirements, contingency plan, and personnel training have been complied with.

Waste Disposal Plan; GA.

A Waste Disposal Plan shall be prepared that will include but not be limited to the following:

- a. A written confirmation that the debris will be treated and disposed of in accordance with the requirements of CFR 40 Part 260, CFR 40 Part 261, CFR 40 Part 262, CFR 40 Part 264 and CFR 40 Part 268.
- b. A written confirmation that transportation of the debris will be in accordance with CFR 40 Part 263.
- c. Waste subcontractor's name, address, telephone number, and landfill location, including copies of licenses and signed agreements.
- d. Landfill name, address, and telephone number. A copy of the landfill's state and locally issued license, and a signed agreement that the landfill will accept the LBP wastes.
- e. Detailed delivery tickets prepared, signed, and dated by an agent of the landfill, certifying the amount of LBP containing materials delivered to the landfill, within 3 days after delivery.

SD-09 Reports

Sampling Result; GA.

A daily log of the personal and environmental air sampling test results shall be reviewed by the Competent Person and submitted, in written form, no more than 48 hours after completion of the sampling cycle. The log shall list each sample result, sampling time and date, sample type, identification of personnel monitored, flow rate and duration, air volume sampled, yield of lead, cassette size, analytical method used, analyst's name and company, and interpretation of results. Results shall be reported in micrograms of lead per cubic meter of air. In addition, the daily log shall include the results of dust wipe samples, soil samples and TCLP sampling including each phase of preabatement, during abatement and final clearance. Documentation of results that exceed specified limits (personal air samples that exceed 30 micrograms per cubic meter) or as required by Federal, state or local requirements shall be highlighted in the log in such a manner to make them easily distinguishable from monitoring results that do not exceed specified or regulatory limits.

SD-13 Certificates

Quality Assurance; GA.

Certificates shall meet the requirements of paragraph QUALITY ASSURANCE. The statements shall be signed and dated by a certifying officer after the award of this contract and contain the following:

- a. Contractor's name and address.
- b. Project name and location.
- c. The specified requirements that are being certified.

1.3 QUALITY ASSURANCE

1.3.1 Qualifications

a. Contractor: Certification that the Contractor has prior experience on LBP abatement projects similar in nature and extent to ensure the capability to perform the abatement in a satisfactory manner.

b. Competent Person: Certification that the Contractor's full-time onsite Competent Person meets the competent person requirements of CFR 29 Part 1926 Section .62 and is experienced in administration and supervision of LBP abatement projects, including work practices, protective measures for building and personnel, disposal procedures, etc. This person shall have completed a Contractor Supervisor LBP abatement course by an EPA Training Center or an equivalent certification course, and have had a minimum of 2 years on-the-job experience.

c. Testing Laboratory: The name, address, and telephone number of the independent testing laboratory selected to perform sampling and analysis for personal and environmental air samples, lead dust wipes, and TCLP

analysis. Documentation that the laboratory performing the analysis is an EPA National Lead Laboratory Accreditation Program (NLLAP) accredited laboratory and that it is rated proficient in the NIOSH/EPA Environmental Lead Proficiency Analytical Testing Program (ELPAT). Certification shall include accreditation for heavy metal analysis, list of experience relevant to analysis of lead in air, and a Quality Assurance and Quality Control Program. Currently, the American Association for Laboratory Accreditation (ASLA) and the American Industrial Hygiene Association (AIHA) are the EPA recognized laboratory accreditors. Documentation shall include the date of accreditation or reaccreditation.

d. Blood Lead Testing Laboratory. The name, address and telephone number of the blood lead testing laboratory; the laboratory's listing by OSHA and the U.S. Public Health Service Center for Disease Control (CDC); and documentation that the laboratory certified in the state where the work site is located.

1.3.2 Respiratory Protection Devices

Manufacturer's certification of NIOSH or the Mine Safety and Health Administration (MSHA) approval for respiratory protection devices utilized on the site.

1.3.3 Cartridges, Filters, and Vacuum Systems

Manufacturer's certification of NIOSH approval of respirator cartridges (organic vapor, acid gas, mist, dust, high efficiency particulate); High Efficiency Particulate Air (HEPA) filtration capabilities for all cartridges, filters, and HEPA vacuum systems.

1.3.4 Medical Records

Certification that employees who are involved in LBP abatement work have received medical examinations and will receive continued medical surveillance, including biological monitoring, as required by CFR 29 Part 1926 Section .62 and by the state and local regulations pertaining to such work. Records shall be retained, at Contractor expense, in accordance with CFR 29 Part 1910 Section .20.

1.3.5 Training

Training certification shall be provided prior to the start of work involving LBP abatement, for all of the Contractors' workers, supervisors and Competent Person. Training shall meet the requirements of CFR 29 Part 1926 Section .62, CFR 29 Part 1926 Section .59 and CFR 49 Part 172, and that required by EPA or the state LBP course for the work to be performed. Training shall be provided prior to the time of job assignment and, at least, annually. Training may cover all abatement methods or focus only on those methods specified in the LBP Management Plan. The project specific training shall, as a minimum, include the following:

a. Specific nature of the operation which could result in exposure to lead.

b. Purpose, proper selection, fitting, use, and limitations of

respirators.

c. Purpose and description of the medical surveillance program and the medical removal protection program, including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females and hazards to the fetus and additional precautions for employees who are pregnant).

d. Relevant engineering controls and good work practices.

e. The contents of any compliance plan in effect.

f. Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

g. The employee's right of access to records under CFR 29 Part 1910 Section .20.

1.3.6 Licenses and Permits

Copies of licenses and permits as required by applicable Federal, state, and local regulations shall be obtained before the start of the LBP abatement project.

1.4 DESCRIPTION OF WORK

LBP is to be removed from the connector building of building 108, as shown on the drawings and in accordance with these specifications. The interior wall of building 108 will become an exterior wall after demolition of building 107. This wall is covered with peeling LBP, which shall be abated by complete removal. Interior surfaces of the connector building, covered with LBP, shall be abated by encapsulation. LBP shall also be removed from all surfaces that are to be saw cut, flame cut, or abraided in any way during building demolition work. Existing paint chips and LBP contaminated debris at the base of the walls shall also be collected and removed from the site.

1.5 SITE VISIT

Contractor shall visit and investigate the site, review the drawings and specifications, assess the amount of LBP, and become familiar with conditions which will affect the work.

1.6 LIABILITY INSURANCE FOR LBP

LBP abatement liability insurance shall be obtained without additional expense to the Government. The Contractor shall assume full responsibility and liability for the compliance with Federal, state, and local regulations pertaining to training, work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site.

1.7 PROTECTION OF EXISTING WORK TO REMAIN

Abatement, storage, transportation, and disposal work shall be performed without damaging or contaminating adjacent work and areas. Where such work or areas are damaged or contaminated, the Contractor shall restore work and areas to the original condition.

1.8 COORDINATION WITH OTHER WORK

Abatement and disposal work shall be coordinated with existing work and/or concurrent work being performed in adjacent areas.

1.9 SAFETY AND HEALTH REGULATORY REQUIREMENTS

Work shall be performed in accordance with requirements of EM 385-1-1 and applicable regulations including, but not limited to CFR 29 Part 1910, CFR 29 Part 1926, especially Section .62. Matters of interpretation of the standards shall be submitted to the appropriate agency for resolution before starting work. Where these requirements vary, the most stringent shall apply.

1.10 PRECONSTRUCTION SAFETY MEETING

The Contractor and NED Construction, Safety, and Occupational Health representatives shall attend a preconstruction safety meeting prior to starting any work involving LBP abatement. Items required to be submitted will be reviewed for completeness, and where specified, for acceptance.

1.11 ACCIDENT PREVENTION PLAN FOR LEAD ABATEMENT WORK

1.11.1 Preparation and Implementation

The Accident Preparation Plan (APP) shall be prepared in accordance with EM 385-1-1, Table 1-1. Where topic in table 1-1 is not applicable, the APP shall justify its omission or reduced level of detail, and establish that adequate consideration was given to the topic. The APP shall cover onsite work by the Contractor or subcontractors. The Competent Person shall be responsible for development, implementation, and quality control of the content and actions required in the APP. For each anticipated work task, the APP shall establish hazards and control measures. The APP shall be easily readable and understandable by the Contractor's work force.

1.11.2 Acceptance and Modifications

The APP shall be prepared, signed and dated by the Contractor's Competent Person and submitted 20 days prior to the preconstruction safety conference. Deficiencies in the APP shall be discussed at the Preconstruction Safety Conference and the APP shall be revised to correct the deficiencies, and resubmitted for acceptance. Onsite work shall not begin until the APP has been accepted unless otherwise authorized by the Contracting Officer. One copy of the APP shall be maintained in the Contractor's jobsite file, and a second copy shall be posted where it will be accessible to personnel on the site. As work proceeds, the APP shall be

adapted to new situations and conditions. Changes to the APP shall be made with concurrence of the Competent Person and Site Superintendent, and acceptance of the Contracting Officer. Should an unforeseen hazard become evident during performance of the work, the Competent Person shall bring such hazard to the attention of the Superintendent and the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, the Contractor shall take necessary action to re-establish and maintain safe working conditions; and to safeguard onsite personnel, visitors, the public, and the environment. Disregard for provisions of this specification, or the accepted APP shall be cause for stopping of work until the matter is rectified.

1.11.3 Activity Hazard Analyses

An Activity Hazard Analysis (AHA) shall be prepared prior to beginning each major phase of the work and submitted for review and acceptance. Format shall be in accordance with EM 385-1-1, figure 1-1. A major phase of work is defined as an operation involving hazards not experienced in previous operations, or where a new work crew is to perform. The analysis shall define the activities and the sequence in which they are to be performed, specific hazards anticipated, and control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the Activity Hazard Analysis has been accepted and a preparatory meeting has been conducted by the Contractor to discuss content of the AHA with everyone engaged in the activity, including the Government's onsite representative. The AHA shall be continuously reviewed and modified when appropriate to address changing conditions or operations. The accepted AHA shall be appended to and become part of the APP.

1.12 RESPIRATORY PROTECTION PROGRAM

A respiratory protection program shall be established as required by CFR 29 Part 1926 Section .103 and .62 and in accordance with CFR 29 Part 1910 Section .134. An approved respirator shall be furnished to each employee and visitor required to enter a LBP work control area. A fit test shall be conducted in accordance with CFR 29 Part 1926 Section .62, Appendix D.

1.13 HAZARD COMMUNICATION PROGRAM

A Hazard Communication Program shall be implemented in accordance with CFR 29 Part 1926 Section .59.

1.14 SAFETY AND HEALTH OVERSIGHT

The Competent Person shall be the onsite person responsible for coordination, safety, security and execution of the work. The Competent Person shall be able to identify existing and predictable lead hazards and shall have the authority to take corrective measures to eliminate them. The Competent Person shall be responsible for ensuring that required sampling is accomplished.

LEAD BASED PAINT REMOVAL, CHARLESTOWN NAVY YARD

1.15 PREPARATORY INSPECTION MEETING

The Contractor and the Government CIH shall arrange and hold a preparatory inspection meeting immediately prior to beginning any LBP abatement. The APP, Activity Hazard Analyses, and the Contractor's LBP Management Plan, including containment, engineering controls, worker protection, training, and monitoring, will be reviewed for completeness.

1.16 TRAINED AND COMPETENT PERSONNEL

Work shall be performed by Competent Persons, qualified and trained in the abatement, encapsulation, monitoring, testing, storage, treatment, hauling, and disposal of contaminated LBP debris material, and in subsequent cleanup of the affected environment. Workers shall comply with the appropriate Federal, state, and local regulations which mandate training requirements and work practices and shall be capable of performing the work under this contract.

1.17 POSTED WARNINGS AND NOTICES

The following regulations, warnings, and notices shall be posted at the work site in accordance with CFR 1926 Section .62.

1.17.1 Regulations

Two copies of applicable Federal, state, and local regulations and NIOSH OSHA Booklet 3142 shall be maintained. One copy shall be posted at the work site and one copy shall be on file in the project office.

1.17.2 Warning Signs and Labels

Warning signs shall be provided at building entrances and approaches to LBP control areas containing airborne LBP debris. Signs shall be located at a distance from the LBP control areas that will allow personnel to read the sign and take the necessary protective actions required before entering the LBP control area.

1.17.2.1 Warning Signs

Warning signs shall be in English and be of sufficient size to be clearly legible and display the following:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

1.17.2.2 Warning Labels

Warning labels shall be in English and be of sufficient size to be clearly legible and display the following:

CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT

REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE OR LOCAL REGULATIONS.

1.17.3 Worker Information

Right-to-know notices shall be placed in clearly visible areas of the work site in compliance with Federal, state, and local regulations.

1.17.4 Air Monitoring Results

Daily air monitoring results shall be prepared so as to be easily understood by the workers, and shall be placed in a clearly visible area of the work site.

1.17.5 Emergency Telephone Numbers

A list of telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, emergency squad, police and fire departments, Government and Contractor representatives who can be reached 24 hours per day, and professional consultants directly involved in the project.

1.18 EQUIPMENT AND MATERIALS

Sufficient quantities of health and safety materials required by CFR 29 Part 1926 Section .62, and other materials and equipment needed to complete the project, shall be available and kept on the site.

1.18.1 Respirators

Air-purifying respirators shall be approved by NIOSH for use with dust, fumes, and mists having permissible exposure limits less than 0.05 milligrams per cubic meter (i.e., have high-efficiency particulate air (HEPA) filters) and for other hazardous airborne contaminants that may be encountered, as determined by the Competent Person. Respirators shall comply with the requirements of CFR 29 Part 1926 Section .62 and shall be used in accordance with CFR 29 Part 1926 Section .103 and CFR 29 Part 1910 Section .134.

1.18.2 Respirator Cartridges

A sufficient supply of respirator cartridges shall be maintained at the work site to provide new cartridges to employees, authorized visitors, and Government personnel throughout the duration of the project. Cartridges shall be replaced according to the manufacturer's recommendations, when breathing becomes difficult, or if the cartridge becomes wet.

1.18.3 Protective Clothing

The Contractor shall furnish, at no cost to personnel, equipment/clothing for protection from airborne and waterborne LBP debris. An adequate supply of these items shall be available for worker, authorized visitor, and Government personnel use. Workers and visitors shall not take protective clothing and equipment off the work site at any time. Protective clothing

includes:

a. Coveralls (Whole Body Protective Coverings): Full-body coveralls and head covers shall be worn by workers in the work area. Sleeves shall be secured at the wrist and pants legs at the ankle with tape. Permeable clothing shall be provided in heat-stress conditions. Where non-disposable coveralls are provided, these coveralls shall be cleaned after each wearing. Cleaning of coveralls and other non-disposable clothing shall be in accordance with the provisions for cleaning in CFR 29 Part 1926 Section .62.

b. Boots: Work boots with nonskid soles or impermeable work boot covers shall be worn by workers. Where required by OSHA, safety boots (steel toe or steel toe and shank) shall be worn. Paint the uppers of boots red with waterproof enamel. Do not allow boots to be removed from the work area for any reason after being contaminated with LBP debris. Dispose of boots as LBP contaminated waste at the end of the work.

c. Gloves: Inner gloves, appropriate for items and hazards encountered, and disposable outer work gloves shall be provided to each worker and shall be worn while the worker is in the work area. Glove material shall be appropriate for the specific chemical exposure. Gloves shall not be removed from the work area, and shall be disposed of as LBP contaminated waste at the end of the work.

d. Hard Hats: Head protection (hard hats) shall be provided as required by OSHA and EM 385-1-1 for workers and authorized visitors. Protective plastic strap suspension hats shall be used. Hard hats shall be worn at all times that work is in progress. Hats shall remain in the work area until the project is completed. Hats shall be thoroughly cleaned, decontaminated, and bagged before being removed from the work area at the end of the project.

e. Eye Protection: Fog-proof goggles for personnel engaged in LBP abatement operations shall be worn when the use of a full face piece respirator is not required.

f. Work Clothing: Cloth work clothes shall be provided for wearing under the disposable protective coveralls and foot coverings.

1.19 STORAGE OF MATERIALS

Materials shall be stored in a place and manner which protects them from damage and contamination. During periods of cold weather, plastic materials shall be protected from the cold. No flammable or hazardous materials shall be stored inside any building. Regularly inspect materials to identify damaged or deteriorating items. Damaged or deteriorated items shall not be used and shall be removed from the site as soon as they are discovered. Any materials which become contaminated with LBP waste shall be disposed of consistent with the requirements of CFR 40 Part 148 and these specifications. Stored materials shall not present a hazard or an inconvenience to workers, visitors, and/or other occupants and employees of the building.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 WORK PROCEDURES

LBP abatement and related work shall be performed in accordance with the accepted Contractor's LBP Management Plan as modified and approved. Procedures and equipment required to limit occupational and environmental exposures to lead during LBP removal shall be in accordance with CFR 29 Part 1926 Section .62, and as specified herein. Paint chips and associated waste shall be disposed of in compliance with Federal, state, and local regulations.

3.1.1 Personnel Protection Procedures

Personnel shall wear and use protective clothing and equipment as specified. Eating, smoking, drinking, chewing tobacco and chewing gum, and applying makeup shall not be permitted in the LBP control area. Personnel of trades not engaged in the abatement and disposal of LBP shall not be exposed at any time to airborne concentrations of lead equal to or in excess of 30 micrograms per cubic meter of air. Electrical service shall be disconnected when wet removal is performed, and temporary electrical service protected by a ground fault circuit interrupter shall be provided.

3.1.2 Safety and Health Procedures

The Competent Person shall be present on the work site throughout the abatement project to supervise, monitor, and document the project's health and safety provisions. A daily log shall be maintained showing the results of sampling tests throughout the project area.

3.1.3 Safety and Health Responsibilities

The Competent Person shall:

- a. Verify that training meets applicable requirements.
- b. Review and approve LBP Management Plan for conformance to the applicable referenced standards.
- c. Inspect LBP removal work for conformance with the accepted LBP Management Plan.
- d. Ensure that worker exposure air monitoring activities are in accordance with CFR 29 Part 1926 Section .62.
- e. Ensure work is performed in strict accordance with specifications.
- f. Ensure hazardous exposure to personnel and to the environment are adequately controlled.

The Competent Person shall be responsible for directing personal and environmental air monitoring sampling.

3.1.4 Medical Surveillance Procedures

Medical surveillance shall be implemented in accordance with the approved Contractor's LBP Management Plan, and shall comply with the requirements of CFR 29 Part 1926 Section .62, including the provisions for biological monitoring, medical removal protection and a physician's written opinion, signed by the physician performing the employee examination. The Contractor shall provide a copy of the written opinion for Contractor's employees 2 days prior to each employee's commencement of work.

3.1.5 Engineering Controls and Containment Structures

3.1.5.1 LBP Control Area

The LBP control area is where LBP abatement work occurs and as such shall be considered contaminated, and shall be isolated to prevent LBP containing dust or debris from passing into adjacent building or open areas. The control area shall be decontaminated at the completion of the LBP abatement and disposal work.

3.1.5.2 Boundary Requirements

Physical boundaries shall be provided around exterior LBP control areas by roping off the area indicated in the LBP Management Plan. Interior projects shall be isolated by curtains, portable partitions, or other enclosures to ensure that concentrations of lead dust outside the LBP control area will not equal or exceed the preabatement level or 200 micrograms per square foot, whichever is greater.

3.1.5.3 Control Barriers

The LBP control area shall be separated from other portions of the building and the outside with control barriers. The polyethylene sheeting will have all openings masked and sealed, and shall be erected according to the Contractor's LBP Management Plan. Polyethylene sheeting shall be mechanically supported, independent of duct tape or spray adhesive.

3.1.5.4 Masking and Sealing

a. Interior LBP control area requirements: Openings shall be sealed where the release of airborne LBP dust is expected. A control area shall be established with the use of curtains, portable partitions, or other systems in order to prevent the escape of dust from the contaminated control area. The control area shall be provided with protective covering of two layers of polyethylene sheeting over floors. Penetrations of the floor, walls, and ceiling shall be sealed with polyethylene sheeting and duct tape. Polyethylene sheeting shall be firmly attached to the structure. Joints shall be sealed with spray adhesive and duct tape. Personal monitoring during the work shift shall be in accordance with CFR 29 Part 1926 Section .62.

b. Exterior LBP control area requirements: Where the construction of a contained LBP control area is impractical, a roped-off perimeter shall be installed 20 feet from, and around, the area where the LBP handling

procedures are performed and other requirements for LBP control areas shall be maintained. Personal monitoring of airborne concentrations shall be conducted in adjacent areas, during the work shift, in accordance with CFR 29 Part 1926 Section .62. Air monitoring outside of the roped-off perimeter shall be conducted as specified. Airborne concentrations shall not exceed specified levels.

3.1.5.5 Personnel Decontamination Unit Procedures

Decontamination units shall be constructed when required for the abatement procedures. Materials fabricated or delivered to the site before the shop drawings have been returned to the Contractor will be subject to rejection by the Contracting Officer. Specifications and drawings of portable prefab units, such as a trailer unit, if utilized, must be submitted for review and approval before start of construction. Submittal shall include, but not be limited to, a floor plan layout showing dimensions, materials, sizes, thicknesses, plumbing, and electrical outlets. Access between contaminated and uncontaminated rooms or areas shall be through an airlock. Access between any two rooms or room and trailer within the decontamination unit shall be through a plastic sheeting curtained doorway. A separate equipment decontamination unit shall be provided. Each work area shall have an emergency exit. The personnel decontamination unit's clean room shall be the only means of entrance and exit, except for emergencies, from the LBP control area. Materials shall exit the LBP control area through the equipment decontamination area.

3.1.5.6 Clean Room Procedures

The clean room shall have only one exit to non-contaminated areas of the building or site. An airtight seal shall be constructed of polyethylene between the clean room and the rest of the building. Surfaces of the clean room shall be protected with sheet polyethylene. A temporary unit with a separate equipment decontamination locker room and a clean locker room shall be provided for personnel who are required to wear whole body protective clothing. One locker shall be provided in each locker room for each LBP abatement worker, and each Contractor's representative. Lead-free personal clothing and shoes shall be kept in the clean locker. Hand wash station/showers shall be located between the equipment decontamination locker room and the clean locker room, and employees shall wash or shower before changing into personal clothes. An adequate supply of clean disposable towels shall be provided. LBP contaminated work clothing shall be cleaned. Clean rooms shall be physically attached to the LBP control area for areas inside the building but may be directly adjacent to the LBP control area outside of the building. Joint use of this space for other functions, such as offices, equipment storage, etc., is prohibited.

3.1.5.7 Hand Wash Station/Shower Room Procedures

An operational shower and hand washing station shall be provided between the work area and the clean changing room. Workers shall wash and/or shower before entering the clean changing room. Shower room shall be separated from other rooms by air tight walls fabricated from polyethylene sheeting. Water shall be hot and cold or warm. Shower heads and controls, soap dish, continuing supply of soap, and clean towels shall be provided. The shower shall be maintained in a sanitary condition. Waste water shall

LEAD BASED PAINT REMOVAL, CHARLESTOWN NAVY YARD

be pumped to drain and through waste water filters that meet state and/or local requirements. These filters shall be located inside the shower unit and filters shall be changed regularly. Spent filters shall be discarded as LBP contaminated waste.

3.1.5.8 Equipment Decontamination Unit Procedures

The Equipment Decontamination Unit shall be used for removal of equipment and materials from the LBP control area, and shall include a wash room, holding room, and an enclosed walkway. The unit shall be constructed from wood framing material and polyethylene sheeting. Workers shall not enter or exit the LBP control area through the Equipment Decontamination Unit. A washdown station, consisting of an enclosed shower unit, shall be located in the work area outside the Wash Room. The washdown station shall be used to clean equipment, bags and containers. Bagged or containerized LBP wastes shall be passed from the work area and cleaned in the Wash Room. The Wash Room shall be separated from the work area by a polyethylene sheeting flap. Wastewater shall be filtered and filters shall be changed as required for the shower unit and the Wash Room. Filters shall be disposed of as LBP contaminated wastes. The Holding Room shall be used as a drop location for bagged LBP passed from the Wash Room. This room shall be constructed so that bagged materials cannot be passed from the Wash Room through the Holding Room to the enclosed walkway. The walkway shall be separated from adjacent rooms by double flaps of 1/16-inch thick single ply rubber roofing materials of EPDM or Neoprene. The enclosed walkway shall isolate the Holding Room from the building exterior and shall be constructed of wood framing and polyethylene sheeting. The walkway shall provide access to the Holding Room from the building exterior. The enclosed walkway shall be separated from the exterior by a single flap of polyethylene sheeting.

3.1.5.9 Maintenance of Decontamination Units

Barriers and polyethylene sheeting shall be effectively sealed and taped. Containment barriers shall be visually inspected at the beginning of each work period. Damaged barriers and defects shall be immediately repaired upon discovery. Smoke methods shall be used to test effectiveness of barriers when directed by the Contracting Officer.

3.1.5.10 LBP Control Area Exiting Procedures

Personnel exiting a LBP control area shall perform the following procedures and shall not leave the work place wearing any clothing or equipment worn during the work day:

- a. Vacuum all protective clothing before removing.
- b. Remove protective clothing in the decontamination room, and place this clothing in an approved impermeable disposal bag.
- c. Wash or shower.
- d. Change to clean clothes prior to leaving the physical boundary designated around the lead-contaminated work site.

3.2 LBP ABATEMENT METHODS

3.2.1 Encapsulation with Surface Coatings (Interior LBP Surfaces)

Peeling and deteriorated surfaces shall be wet scraped prior to application of the approved encapsulant. Debris shall be handled in accordance with the Hazardous Waste Management Plan. Surfaces shall be prepared according to the manufacturer's specifications. Surface coatings shall not be applied to friction surfaces such as window tracks or door jams.

3.2.1.1 Encapsulant

Encapsulant means a coating product applied in liquid form, with or without a structural reinforcement, that is formulated to be a long-lasting and resilient covering that forms an effective barrier over paint or other coatings containing a dangerous level of lead. Paint is not an encapsulant. Only those encapsulants that are listed on the Register of Approved Encapsulants may be used to abate lead hazards in compliance with 105 CMR 460.000.

3.2.2 Vacuum Blasting (Exterior LBP Surfaces)

LBP may be removed by vacuum blasting techniques with the device fitted to HEPA vacuum systems. Work shall be performed in a LBP control area. Paint residue shall be handled in accordance with the Hazardous Waste Management Plan.

3.2.3 Needle Gun (Exterior LBP Surfaces)

LBP may be removed by needle gun with the device fitted to HEPA vacuum systems. Work shall be performed in a LBP control area. Paint residue shall be handled in accordance with the Hazardous Waste Management Plan.

3.3 MONITORING

During the entire LBP removal and disposal operations, a Competent Person shall be onsite directing the monitoring/sampling and inspecting the work to ensure that the health and safety requirements of this contract are satisfied.

3.3.1 Personal Air Monitoring

Airborne concentrations of lead shall be collected and analyzed in accordance with CFR 29 Part 1926 Section .62. Results shall be reported in micrograms per cubic meter of air. The Competent Person shall use personal air monitoring results to determine the effectiveness of engineering controls, the adequacy of PPE and to determine if proper work practices are being employed. The Contracting Officer shall be notified if any personal air monitoring result equals or exceeds 30 micrograms per cubic meter of air. The Contractor shall take steps to reduce the concentration of lead in the air.

LEAD BASED PAINT REMOVAL, CHARLESTOWN NAVY YARD

be pumped to drain and through waste water filters that meet state and/or local requirements. These filters shall be located inside the shower unit and filters shall be changed regularly. Spent filters shall be discarded as LBP contaminated waste.

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- b. Remove protective clothing in the decontamination room, and place this clothing in an approved impermeable disposal bag.
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- d. Change to clean clothes prior to leaving the physical boundary designated around the lead-contaminated work site.

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3.2.1.1 Encapsulant

Encapsulant means a coating product applied in liquid form, with or without a structural reinforcement, that is formulated to be a long-lasting and resilient covering that forms an effective barrier over paint or other coatings containing a dangerous level of lead. Paint is not an encapsulant. Only those encapsulants that are listed on the Register of Approved Encapsulants may be used to abate lead hazards in compliance with 105 CMR 460.000.

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Contracting Officer's representative with the criteria in the final cleaning/visual inspection example format sheet located at the end of this section. If the area does not pass the visual inspection, the Contractor shall reclean the area as required by paragraph CLEANUP AND DISPOSAL, at no additional expense to the Government. Final clearance testing shall not proceed until the Contracting Officer has accepted the final cleaning by the Contractor.

3.5.3 Final Clearance Testing

Final clearance surface dust sampling in accordance with HUD ACCN-5646 shall be conducted after a thorough cleanup has been completed in accordance with the following:

- a. Encapsulation. One wipe sample shall be taken in each area divided equally between window wells, window sills, and floors.
- b. Exterior abatement. At least one wipe sample shall be taken on a horizontal surface.

Retests. Should laboratory results indicate that the wipe test clearance level is exceeded, the Contractor shall reclean the affected area, at no additional cost to the Government. The Contractor shall utilize specified cleaning methods. Retesting will then be performed to determine if specified clearance criteria was met. The Contractor shall pay for additional testing and shall provide, at no additional cost, a recleaning of an affected area until the clearance level is achieved.

3.5.4 Certification

The Competent Person shall certify in writing that inside the LBP control area and the area external to the LBP control area met final clearance requirements.

3.5.5 Removal of Control Area

After approval of the final clearance certification, and when authorized by the Contracting Officer, the LBP control area, containment barriers, and control structures roped-off boundary and warning signs shall be removed.

3.5.6 Disposal

3.5.6.1 Toxicity Characteristic Leaching Procedure (TCLP) Results

The results of the TCLP analysis performed during abatement shall be used to determine disposal procedures.

3.5.6.2 Contaminated Waste

Lead-contaminated waste, scrap, and debris shall be disposed of as follows:

- a. Lead-contaminated waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing, which may produce airborne concentrations of lead particles shall be stored in U.S. Department of Transportation CFR 49 Part 178 approved 55 gallon drums. Each drum shall

be labeled to identify the type of waste as defined in CFR 49 Part 172 and the date lead-contaminated wastes were first put into the drum. The Uniform Hazardous Waste Manifest forms from Federal and state agencies shall be obtained and completed. Land disposal restriction notifications shall be as required by CFR 40 Part 268. The Contracting Officer shall be notified at least 14 days prior to delivery to arrange for job site inspection of the drums and manifests. Lot deliveries of hazardous wastes shall be made as needed to ensure that drums do not remain on the work site longer than 90 calendar days from the date affixed to each drum. The Contracting Officer will assign an area for interim storage of waste-containing drums.

b. Lead-contaminated waste shall be handled, stored, transported, and disposed of in accordance with CFR 40 Part 260, CFR 40 Part 261, CFR 40 Part 262, CFR 40 Part 263, CFR 40 Part 264, and CFR 40 Part 265. Land disposal restriction notification shall be as required by CFR 40 Part 268.

3.5.6.3 Non-Contaminated Waste

Non-contaminated waste, scrap, and debris shall be disposed of in accordance with applicable local regulations.

3.5.7 Disposal Documentation

Written evidence shall be provided that the hazardous waste treatment, storage, or disposal facility is approved for lead disposal by the EPA and state or local regulatory agencies. One copy shall be submitted of the completed manifest; signed, and dated by the initial transporter in accordance with CFR 40 Part 262.

3.5.8 Title to Materials

Materials resulting from demolition work, except as specified otherwise, shall become the property of the Contractor, and shall be disposed of in accordance with Section 02050 DEMOLITION, except as specified herein.

3.5.9 Payment for Hazardous Waste

Payment for disposal of hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials delivered is returned and a copy is furnished to the Government.

-- End of Section --

CERTIFICATION OF FINAL CLEANING AND VISUAL INSPECTION

Individual abatement task as identified in paragraph,
Description of Work _____

In accordance with the clearing and decontamination procedures specified in the Contractor's lead hazard abatement plan and this contract, the Contractor hereby certifies that he/she has thoroughly visually inspected the decontaminated regulated work area and has found no dust, debris, or lead containing material residue.

BY: (Contractor's signature) _____ Date _____
Print name and title _____

(Contractor's Onsite Supervisor signature) _____ Date _____
Print name and title _____

(Contractor's Competent Person signature) _____ Date _____
Print name and title _____

CONTRACTING OFFICER ACCEPTANCE OR REJECTION

The Contracting Officer hereby determines that the Contractor has performed final cleaning and visual inspection of the decontaminated regulated work area and by quality assurance inspection, finds the Contractor's final cleaning to be:

_____ Acceptable

_____ Unacceptable, Contractor instructed to reclean the LBP control work area

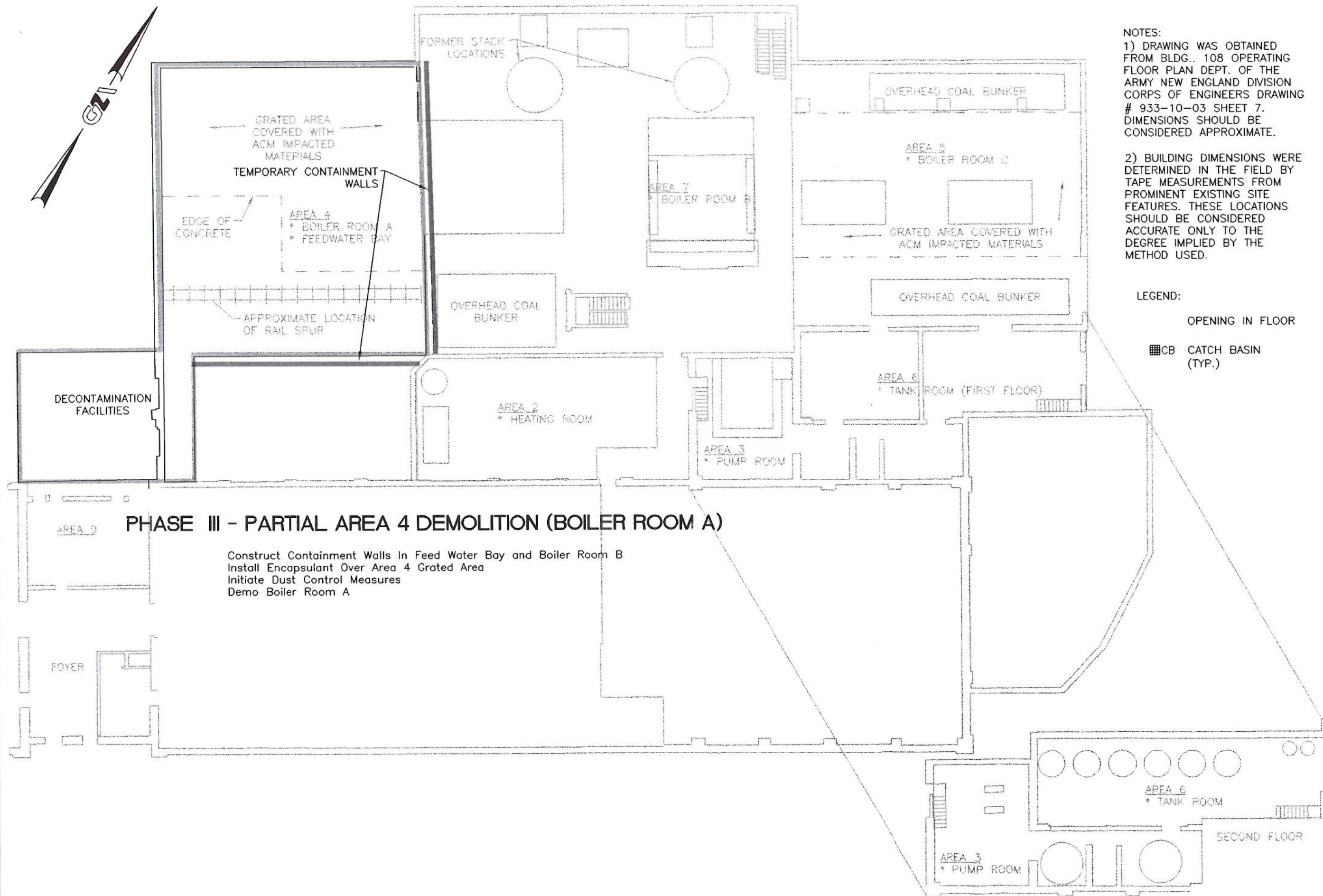
BY: Contracting Officer's Representative

Signature _____ Date _____
Print name and title _____

Contract Number: ENGRG DUR CONST | Project Title: LEAD BASED PAINT REMOVAL, CHARLESTOWN NAVY

| SPEC SECTION NO. | SD NO, AND TYPE OF SUBMITTAL MATERIAL OR PRODUCT | SPEC PARA NO. | CLASSIF/ APPR BY CO * | GOVT OR A/E REVIEWER | TRANS CONTROL NO. | PLANNED SUBMITTAL DATE |
|------------------------|---|---------------------|-----------------------------------|----------------------------|-------------------------|------------------------------|
| (a) | (b) | (c) | (d) | (e) | (f) | (g) |
| 1) 02090 | SD-01 Data | 1.2 | | | | |
| 2) | Equipment List | | GA | E | | |
| 3) 02090 | SD-08 Statements | 1.2 | | | | |
| 4) | Lead-Based Paint (LBP) | | GA | E | | |
| 5) | Management Plan | | | | | |
| 6) | Emergency Contingency Plan | | GA | C | | |
| 7) | Hazardous Waste Management Plan | | GA | E | | |
| 8) | Waste Handling and Site Storage | | GA | E | | |
| 9) | Plan | | | | | |
| 10) | Waste Disposal Plan | | GA | E | | |
| 11) 02090 | SD-09 Reports | 1.2 | | | | |
| 12) | Sampling Result | | GA | E | | |
| 13) 02090 | SD-13 Certificates | 1.2 | | | | |
| 14) | Quality Assurance | 1.3 | GA | C | | |

* Army Notes:
Classification:
GA: Gov't Approval
FIO: For Information Only



NOTES:
 1) DRAWING WAS OBTAINED FROM BLDG.. 108 OPERATING FLOOR PLAN DEPT. OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS DRAWING # 933-10-03 SHEET 7. DIMENSIONS SHOULD BE CONSIDERED APPROXIMATE.
 2) BUILDING DIMENSIONS WERE DETERMINED IN THE FIELD BY TAPE MEASUREMENTS FROM PROMINENT EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

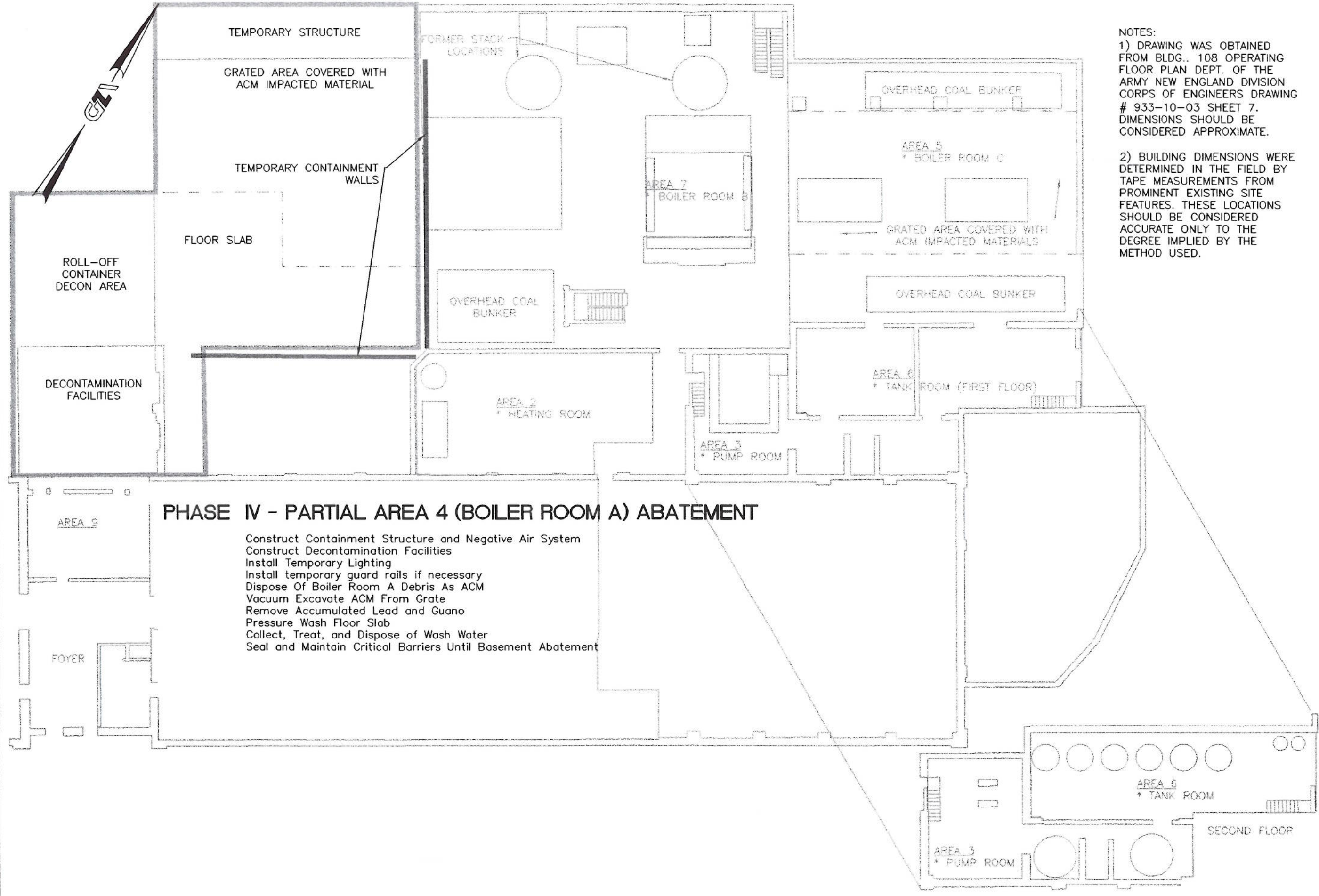
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 [Symbol] OPENING IN FLOOR
 [Symbol] CB CATCH BASIN (TYP.)

REMEDIAL ACTION WORK PLAN
BUILDING 108
 CHARLESTOWN NAVY YARD
 CHARLESTOWN, MASSACHUSETTS
PHASE III AREA PLAN

PROJECT No.: 22206.0
 FIGURE No.: 6

DES'D BY : J.C.M.
 CHK'D BY : D.P.S.
 APP'D BY : T.J.C.
 DRAWN BY : M.A.N.
 SCALE : 1"=20'
 DATE : DEC. 1998

GZA
GeoEnvironmental, Inc.
 Engineers and Scientists
 380 HARVEY ROAD
 MANCHESTER, NEW HAMPSHIRE 03103
 (603) 623-3600



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 2) BUILDING DIMENSIONS WERE DETERMINED IN THE FIELD BY TAPE MEASUREMENTS FROM PROMINENT EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

**REMEDIAL ACTION WORK PLAN
 BUILDING 108**

CHARLESTOWN NAVY YARD
 CHARLESTOWN, MASSACHUSETTS

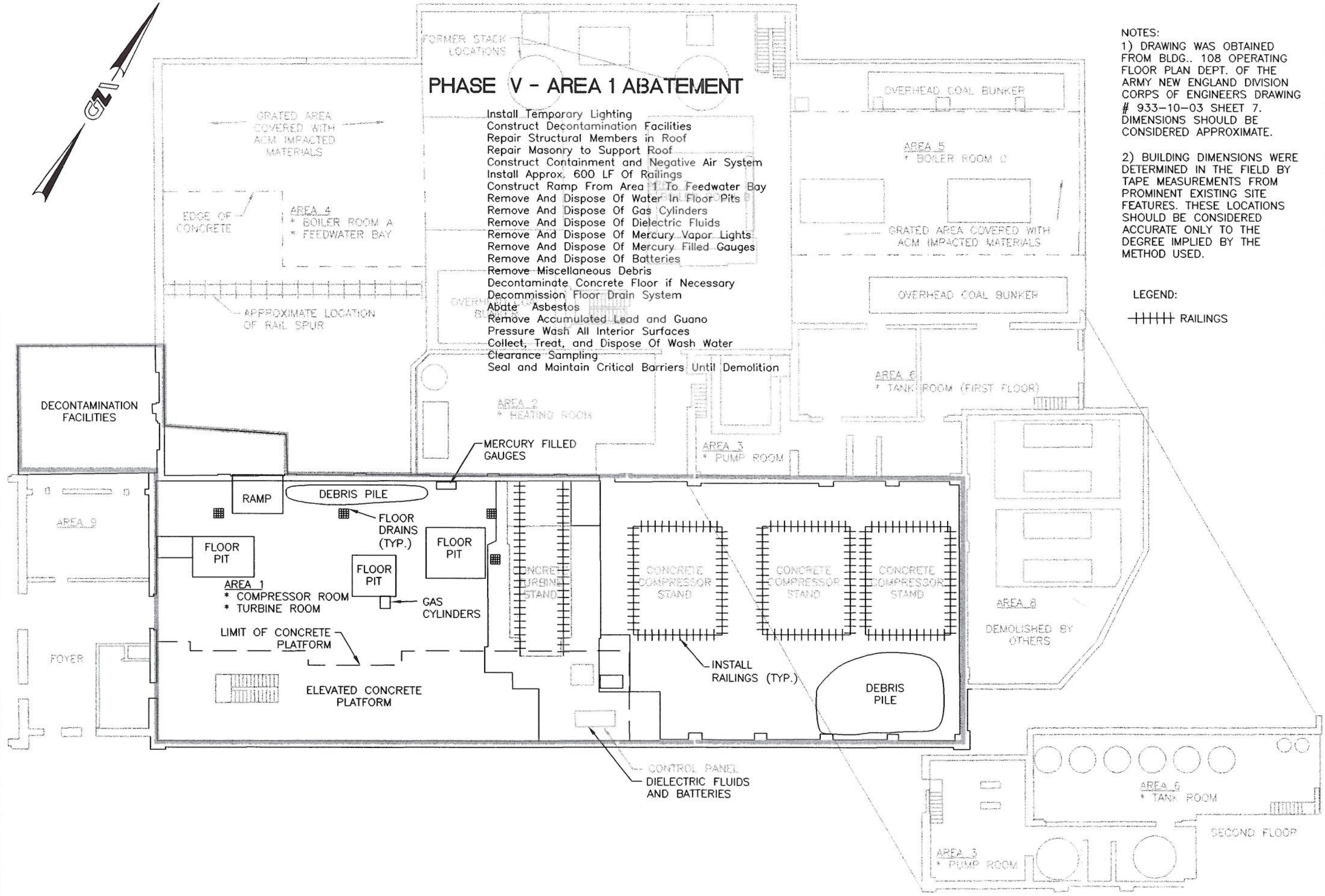
PHASE IV AREA PLAN

PROJECT No.: 22206.0
 FIGURE No.: 7

DES'D BY : J.C.M.
 CHK'D BY : D.P.S.
 APP'D BY : T.J.C.
 DRAWN BY : M.A.N.
 SCALE : 1"=20'
 DATE : DEC. 1998



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 2) BUILDING DIMENSIONS WERE DETERMINED IN THE FIELD BY TAPE MEASUREMENTS FROM PROMINENT EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

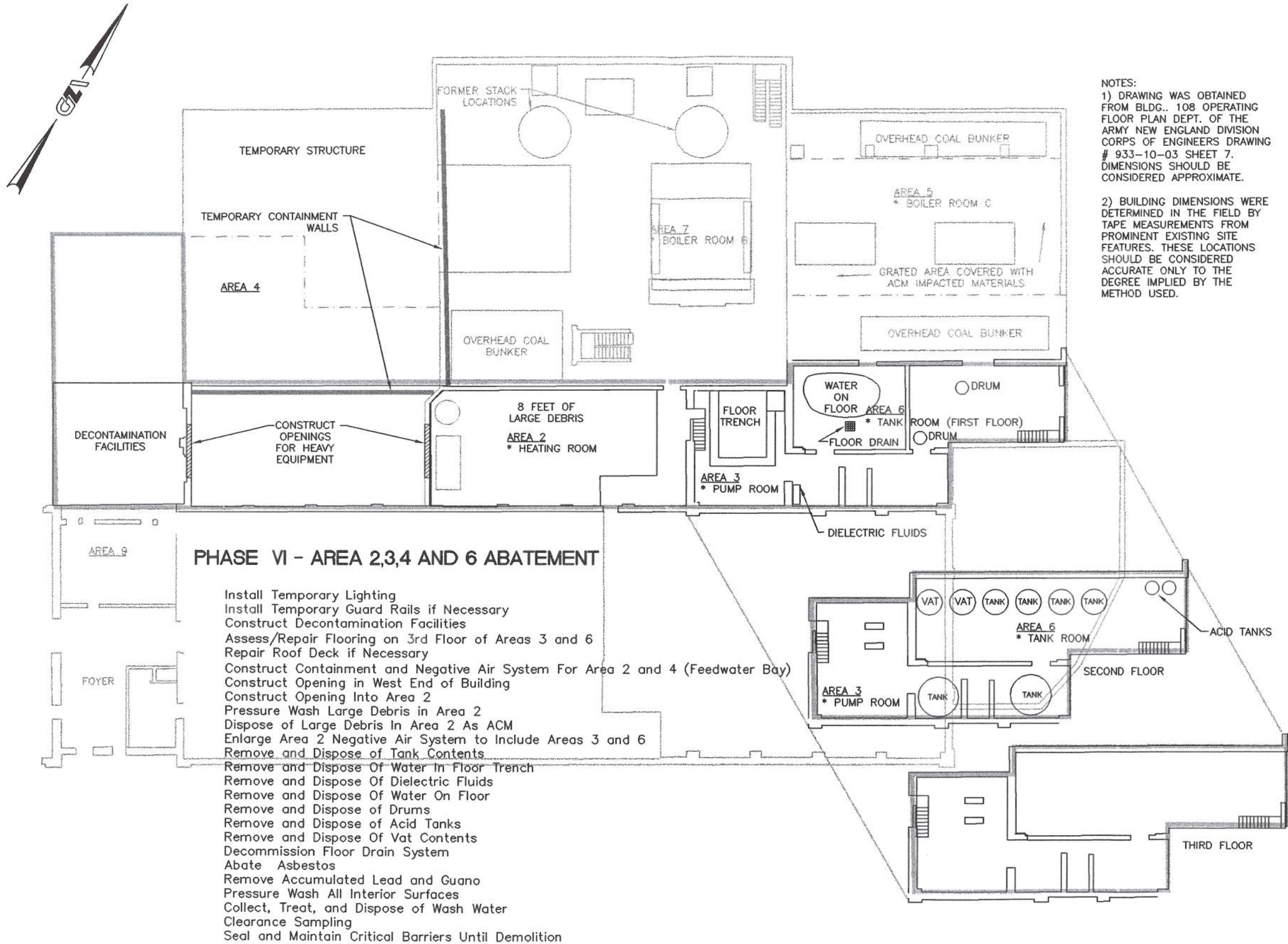
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REMEDIAL ACTION WORK PLAN
 BUILDING 108
 CHARLESTOWN NAVY YARD
 CHARLESTOWN, MASSACHUSETTS
 PHASE V AREA PLAN

PROJECT No.: 22206.0
 FIGURE No.: 8

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 APP'D BY : T.J.C.
 DRAWN BY : M.A.N.
 SCALE : 1"=20'
 DATE : DEC. 1998

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REMEDIAL ACTION WORK PLAN
BUILDING 108
 CHARLESTOWN NAVY YARD
 CHARLESTOWN, MASSACHUSETTS

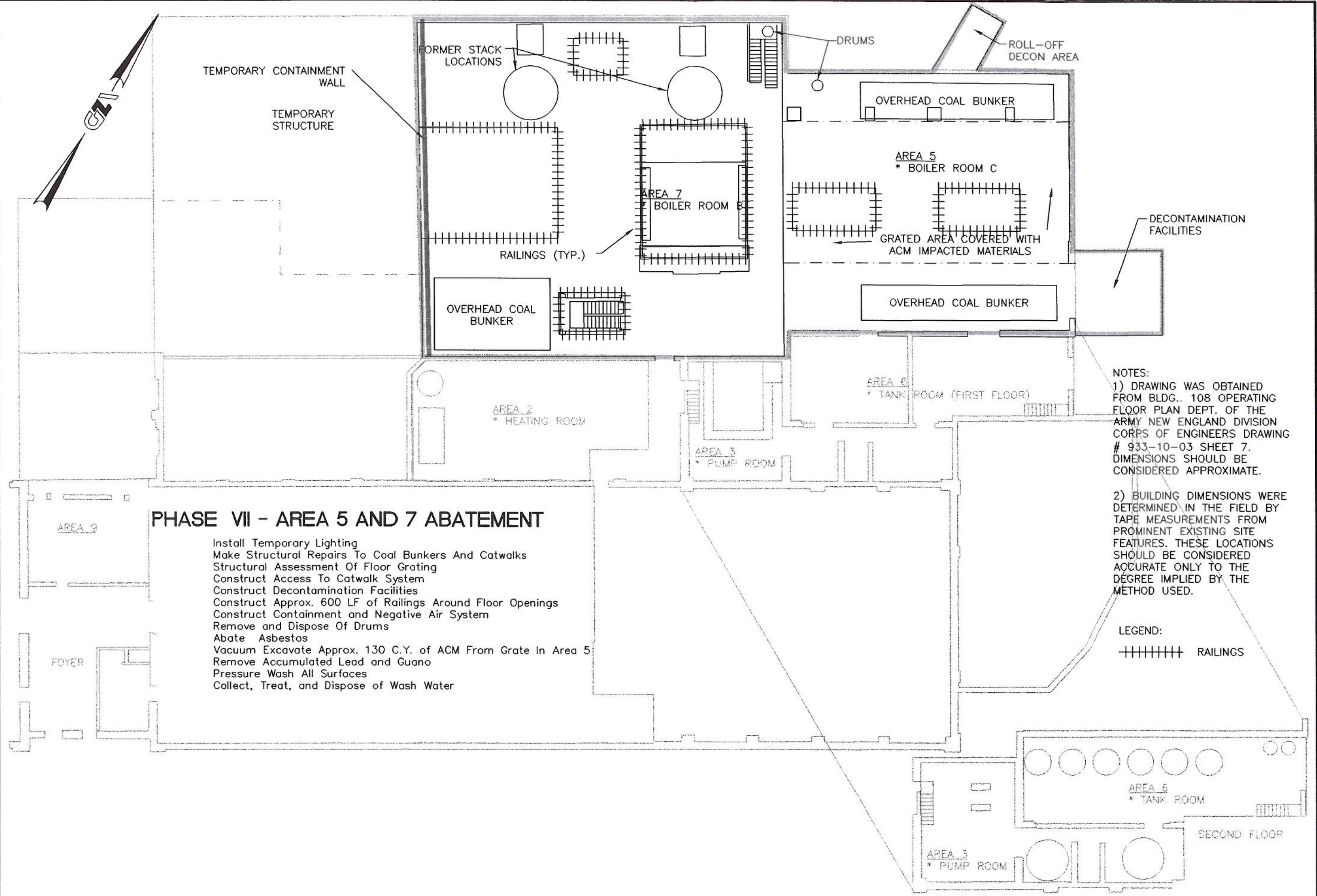
PHASE VI AREA PLAN

PROJECT No.: 22206.0
 FIGURE No.: 9

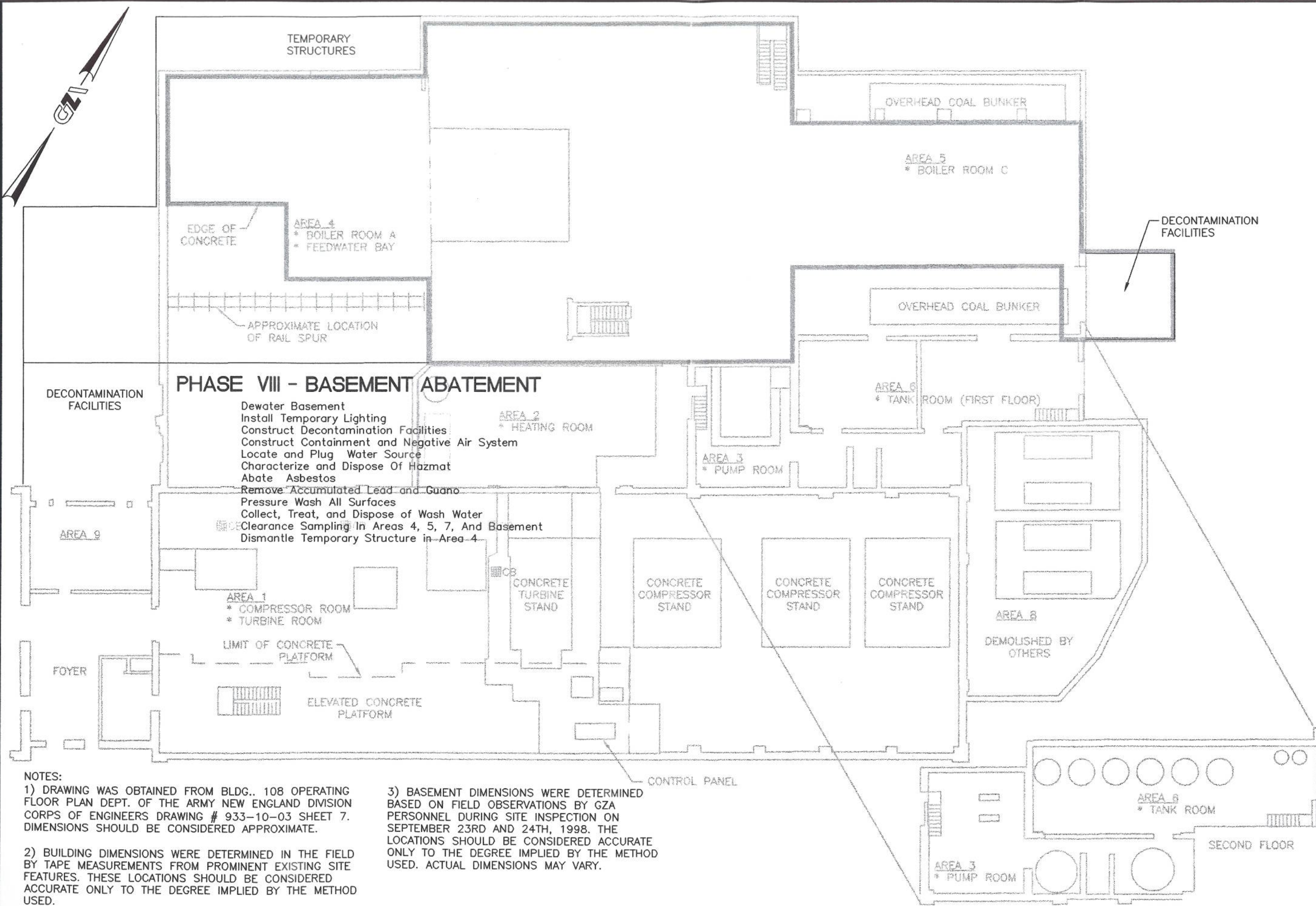
DES'D BY : J.C.M.
 CHK'D BY : D.P.S.
 APP'D BY : T.J.C.
 DRAWN BY: M.A.N.
 SCALE : 1"=20'
 DATE : DEC. 1998

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 (603) 623-3600

GRAPHIC SCALE: 0' 20' 40'



| | | | |
|--|--|--|--|
| <p>REMEDIAL ACTION WORK PLAN BUILDING 108 CHARLESTOWN NAVY YARD CHARLESTOWN, MASSACHUSETTS</p> | | <p>DESIGNED BY : J.C.M. CHECKED BY : D.P.S. APP'D BY : T.J.C. DRAWN BY : M.A.N. SCALE : 1"=20' DATE : DEC. 1998</p> | <p>GZA GeoEnvironmental, Inc. <i>Engineers and Scientists</i> 380 HARVEY ROAD MANCHESTER, NEW HAMPSHIRE 03103 (603) 623-3600</p> |
| <p>PHASE VII AREA PLAN</p> | | <p>PROJECT No.: 22206.0 FIGURE No.: 10</p> | |



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2) BUILDING DIMENSIONS WERE DETERMINED IN THE FIELD BY TAPE MEASUREMENTS FROM PROMINENT EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) BASEMENT DIMENSIONS WERE DETERMINED BASED ON FIELD OBSERVATIONS BY GZA PERSONNEL DURING SITE INSPECTION ON SEPTEMBER 23RD AND 24TH, 1998. THE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED. ACTUAL DIMENSIONS MAY VARY.

**REMEDIAL ACTION WORK PLAN
BUILDING 108**

CHARLESTOWN NAVY YARD
CHARLESTOWN, MASSACHUSETTS

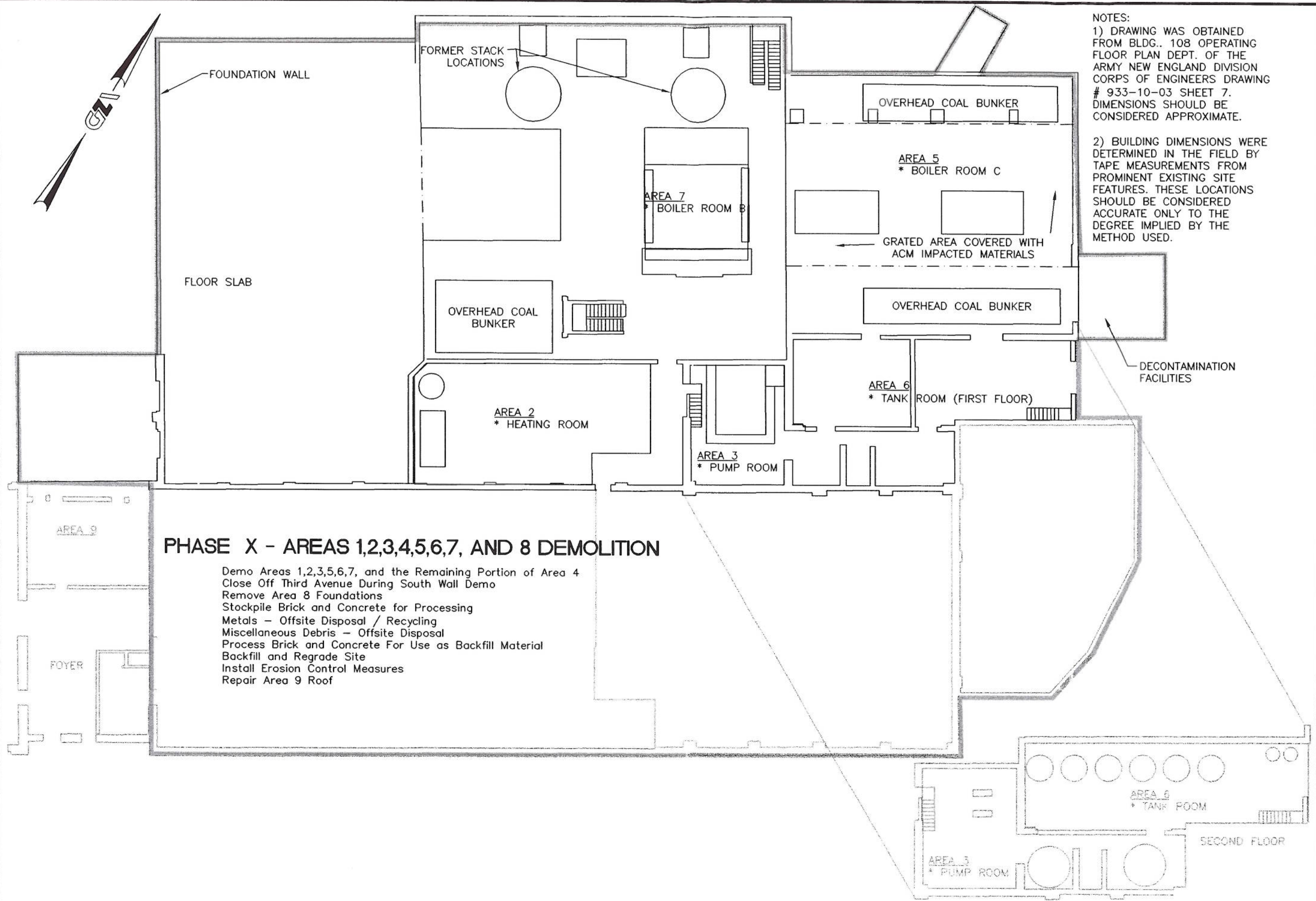
PHASE VIII AREA PLAN

PROJECT No.: 22206.0
FIGURE No.: 11

DES'D BY : J.C.M.
CHK'D BY : D.P.S.
APP'D BY : T.J.C.
DRAWN BY : M.A.N.
SCALE : 1"=20'
DATE : DEC. 1998

GRAPHIC SCALE 0' 20' 40'

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|--|-------------------|--|
| REMEDIAL ACTION WORK PLAN BUILDING 108 CHARLESTOWN NAVY YARD CHARLESTOWN, MASSACHUSETTS | DES'D BY : J.C.M. | GZA GeoEnvironmental, Inc. Engineers and Scientists 380 HARVEY ROAD MANCHESTER, NEW HAMPSHIRE 03103 (603) 623-3600 |
| | CHK'D BY : D.P.S. | |
| | APP'D BY : T.J.C. | |
| | DRAWN BY : M.A.N. | |
| PHASE X AREA PLAN | SCALE : 1"=20' | PROJECT No.: 22206.0 |
| | DATE : DEC. 1998 | |